



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D3910-3**  
**Job Sheet 173552**



**Part No:** D3910-3

**Job Qty:** 30 ea

**Part Name:** Crosstube Lug



**Part Weight:** 0 lbs

**Status:** Scheduled

**Priority:** Medium

**Job Created:** 3/5/18

**Job Tracking No:**

**Due Date:** 3/23/18

**Created By:** Chantal Lavoie

**Type:** Stock

**Description:**

**Note:** DWG REV E SHEETS 1,3 IPP REV:A NEW ISSUE 09-11-25 JLM VERIFIED BY:DD IPP REV:B AS PER REV B 10-03-23 JLM VERIFIED BY:DD IPP REV:C 18.02.02 REMOVE FINISH DD VERF:JFS

**Ship Via:**

### Bill of Materials

### Job Routing

| Op No | Operation  | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off       |
|-------|------------|--------|------------|----------|-----------|---------|-----------------------|-----------|----------------|
|       |            |        |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |                |
| 110   | Purchasing | 30 pcs | 3/23/18    | 3/23/18  | 0.00      | 0.00    | Purchasing            |           | AT 18/03/18    |
| 120   | Packaging  | 30 pcs | 3/23/18    | 3/23/18  | 0.00      | 0.00    | Packaging2            |           | AT 18/03/18    |
| 130   | QC         | 30 pcs | 3/23/18    | 3/23/18  | 0.00      | 0.00    | QC6                   |           | 11 MAR 31 2018 |
| 180   | Packaging  | 30 pcs | 3/23/18    | 3/23/18  | 0.00      | 0.00    | Packaging3-2          | 5/523     | 9-89           |
| 190   | QC21-SA    | 30 Ea  | 3/23/18    | 3/23/18  | 0.00      | 0.00    | QC21                  |           | DAS 13 9-89    |

Part Op 110 - ISSUE PO TO METEC, NOTE ALODINE AND PAINT AS PER QSI 005  
Descriptions: 120 - Ensure C of C is attach

710-039194

DAS 13 9-89 MAR 05 2018

DAS 21 9-89 APR 02 2018

### Job BOM

| Part / Item | Component Name | Quantity            | Operation      | Container |
|-------------|----------------|---------------------|----------------|-----------|
| D2423       | Lug Extrusion  | 3.7500 ft (.125 ea) | 110-Purchasing | 5056813   |
| D3910-3P    | Crosstube Lug  | 30 pcs (1 ea)       | 110-Purchasing | 5056803   |

### Job Allocations

| Operation      | Component Part | Required | Inventory | Allocated |
|----------------|----------------|----------|-----------|-----------|
| 110-Purchasing | D2423          | 4        | 800       | 0         |
|                | D3910-3P       | 30       | 0         | 0         |

**CONTAINER NO.**

**Crosstube Lug**

**Crossstab**

**PART NO:** D3910-3  
**Serial No/Batch:** S056814  
**Revision:**  
**Operation:** Packaging  
**Change No:**

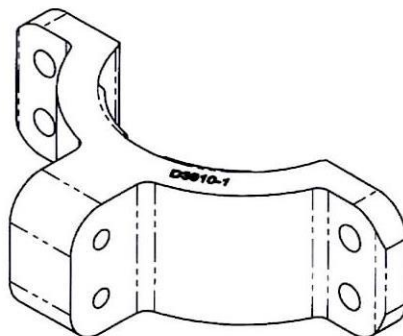
## Packaging

Mfg Date: 03/29/18  
Job No: 173552

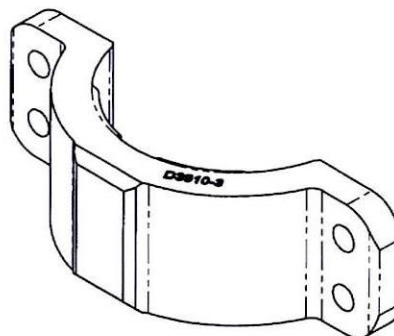
| Part Specifications |               |                                    |                  |           |                  |
|---------------------|---------------|------------------------------------|------------------|-----------|------------------|
| Spec No             | Description   | Target/Tolerance                   | Limits           | Type      | Special Comments |
| 1                   | Crosstube Lug | 4.450Inches $\pm$ 0.030            | 4.480<br>4.420   |           |                  |
| 2                   | Crosstube Lug | 1.380Inches $\pm$ 0.030            | 1.410<br>1.350   |           |                  |
| 3                   | Crosstube Lug | 0.080Inches $\pm$ 0.020            | 0.100<br>0.060   | Radius    |                  |
| 4                   | Crosstube Lug | 0.270Inches $\pm$ 0.030            | 0.300<br>0.240   | reference |                  |
| 5                   | Crosstube Lug | 0.310Inches $\pm$ 0.030            | 0.340<br>0.280   |           |                  |
| 6                   | Crosstube Lug | 0.735Inches $\pm$ 0.010            | 0.745<br>0.725   | reference |                  |
| 7                   | Crosstube Lug | 1.200Inches $\pm$ 0.030            | 1.230<br>1.170   | Radius    |                  |
| 8                   | Crosstube Lug | 3.700Inches $\pm$ 0.010            | 3.710<br>3.690   |           |                  |
| 9                   | Crosstube Lug | 0.375Inches $\pm$ 0.010            | 0.385<br>0.365   |           |                  |
| 10                  | Crosstube Lug | 0.625Inches $\pm$ 0.010            | 0.635<br>0.615   |           |                  |
| 11                  | Crosstube Lug | 0.375Inches $\pm$ 0.010            | 0.385<br>0.365   |           |                  |
| 12                  | Crosstube Lug | 0.340Inches $\pm$ 0.030            | 0.370<br>0.310   | Radius    |                  |
| 13                  | Crosstube Lug | 0.257Inches $\pm$ 0.006<br>- 0.001 | 0.263<br>0.256   | Diameter  |                  |
| 14                  | Crosstube Lug | 0.100Inches $\pm$ 0.010            | 0.110<br>0.090   |           |                  |
| 15                  | Crosstube Lug | 45.000Degrees $\pm$ 0.500          | 45.500<br>44.500 | angle     |                  |
| 16                  | Crosstube Lug | 1.410Inches $\pm$ 0.030            | 1.440<br>1.380   | Reference |                  |

Plex 3/5/18 7:55 AM dart.lavoie.chantal

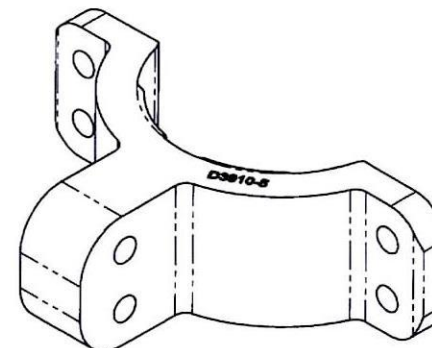




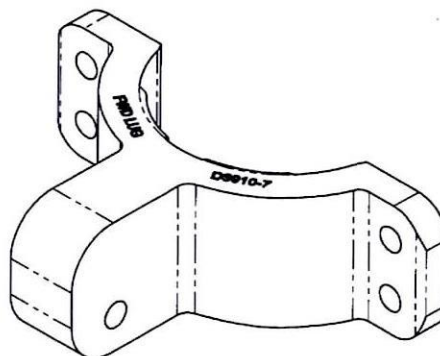
**D3910-1 X-TUBE LUG**



**D3910-3 X-TUBE LUG**



**D3910-5 X-TUBE LUG**



**D3910-7 X-TUBE LUG**

**NOTES:**

- 1) MATERIAL: MAKE FROM D2423 EXTRUSION
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: ENGRAVE PART NUMBER TO A DEPTH OF 0.010  $\pm$  0.005 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.015  $\pm$  0.005
- 7) WEIGHT -1: 0.32 lbs  
-3: 0.25 lbs  
-5: 0.36 lbs  
-7: 0.37 lbs
- 8) IDENTIFICATION: ENGRAVE "FWD LUG" TO A DEPTH OF 0.010  $\pm$  0.005 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.015  $\pm$  0.005

**RELEASED**

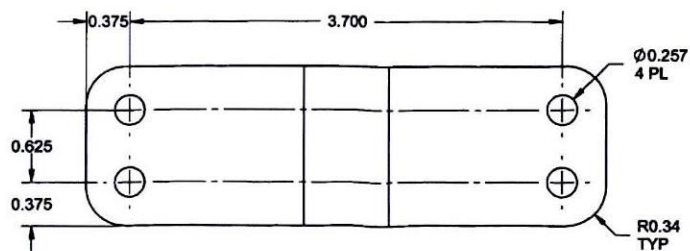
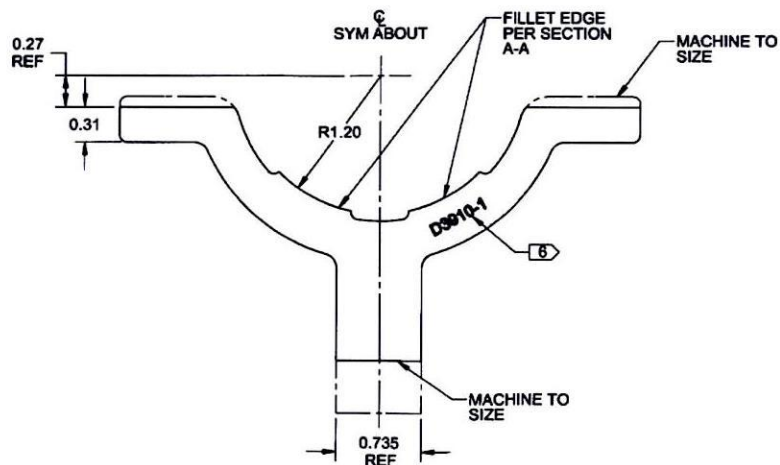
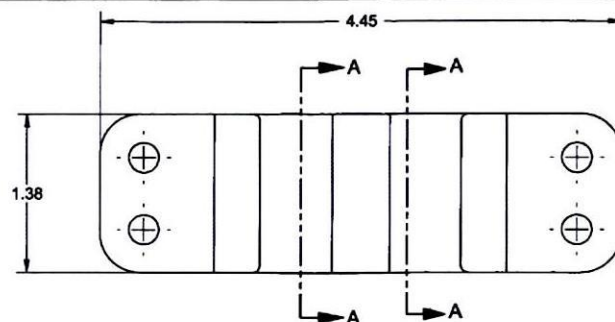
2014 JUN 05 *dp*  
ECN 14-572

| E          | ADD -7 PER NCR14-3871                                                                                                | AJS                                                                                                                                                                                                                                                                             | 14.05.16     |
|------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| D          | CHANGED FASTENER HOLES IN -5 FOR 1/4" HARDWARE.<br>REASON: EASE OF INSTALLATION.                                     | AJS                                                                                                                                                                                                                                                                             | 13.08.14     |
| C          | ADD -5.                                                                                                              | AJS                                                                                                                                                                                                                                                                             | 13.08.08     |
| B          | Ø0.257 HOLES; 4 PL WAS 2 PL (A3-2) & (A3-3); R0.34<br>FILLET WAS R0.50 (A3-2) & (A3-3).<br>REASON: SEE TR-0350-607-2 | JPH                                                                                                                                                                                                                                                                             | 10.03.16     |
| A          | NEW ISSUE                                                                                                            | JPH                                                                                                                                                                                                                                                                             | 10.03.04     |
| REV.       | DESCRIPTION                                                                                                          | BY                                                                                                                                                                                                                                                                              | DATE         |
| DESIGN     | AJS                                                                                                                  | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                        |              |
| DRAWN      | AJS                                                                                                                  |                                                                                                                                                                                                                                                                                 |              |
| CHECKED    | <i>[Signature]</i>                                                                                                   | DRAWING NO.                                                                                                                                                                                                                                                                     | REV. E       |
| MFG. APPR. | <i>[Signature]</i>                                                                                                   | D3910                                                                                                                                                                                                                                                                           | SHEET 1 OF 5 |
| APPROVED   | <i>[Signature]</i>                                                                                                   | TITLE                                                                                                                                                                                                                                                                           | SCALE        |
| DE APPR.   | <i>[Signature]</i>                                                                                                   | X-TUBE LUG (350)                                                                                                                                                                                                                                                                | NTS          |
| DATE       | 14.05.16                                                                                                             | COPYRIGHT © 2010 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |

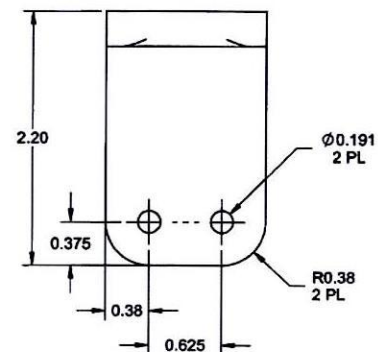


ROUND EDGE  
R0.06 MIN - R0.10 MAX  
2 PL

**SECTION A-A**



**D3910-1 X-TUBE LUG**



**RELEASED**

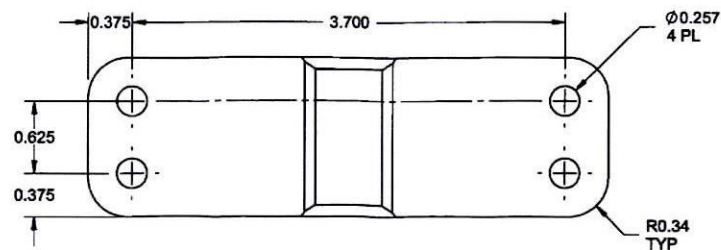
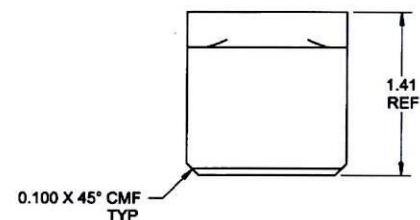
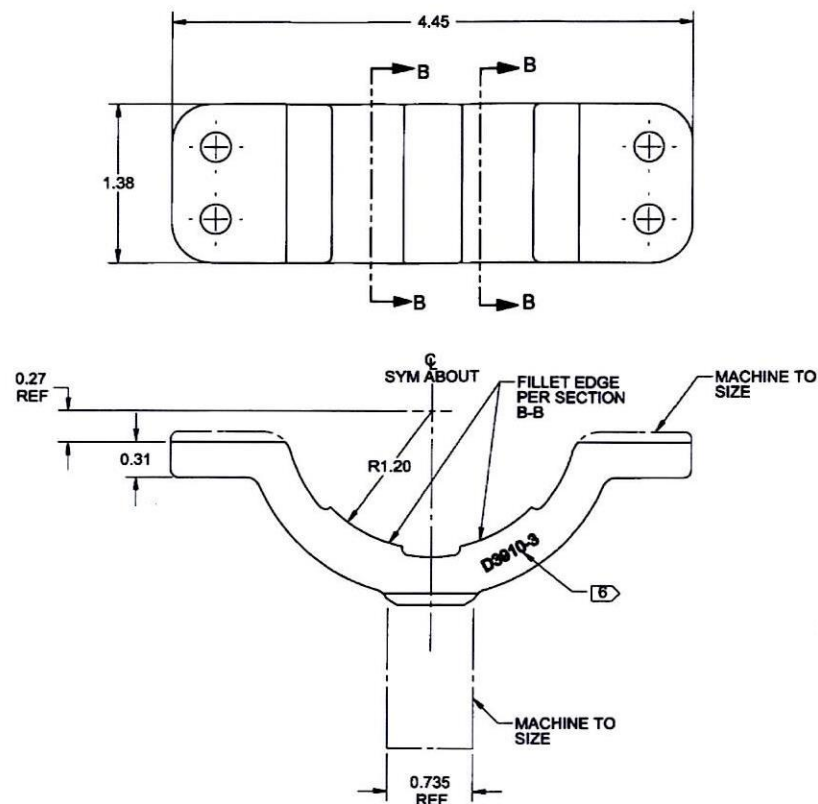
2014 JUN 05

|            |                    |                                                                                                                                                                                                                                                                                  |              |
|------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | AJS                | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                         |              |
| DRAWN      | AJS                |                                                                                                                                                                                                                                                                                  |              |
| CHECKED    | <i>[Signature]</i> | DRAWING NO.<br><b>D3910</b>                                                                                                                                                                                                                                                      | REV. E       |
| MFG. APPR. | <i>[Signature]</i> |                                                                                                                                                                                                                                                                                  | SHEET 2 OF 5 |
| APPROVED   | <i>[Signature]</i> | TITLE                                                                                                                                                                                                                                                                            | SCALE        |
| DE APPR.   | <i>[Signature]</i> | <b>X-TUBE LUG (350)</b>                                                                                                                                                                                                                                                          | NTS          |
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**SECTION B-B**



ROUND EDGE  
R0.06 MIN - 0.10 MAX  
2 PL



**D3910-3 X-TUBE LUG**

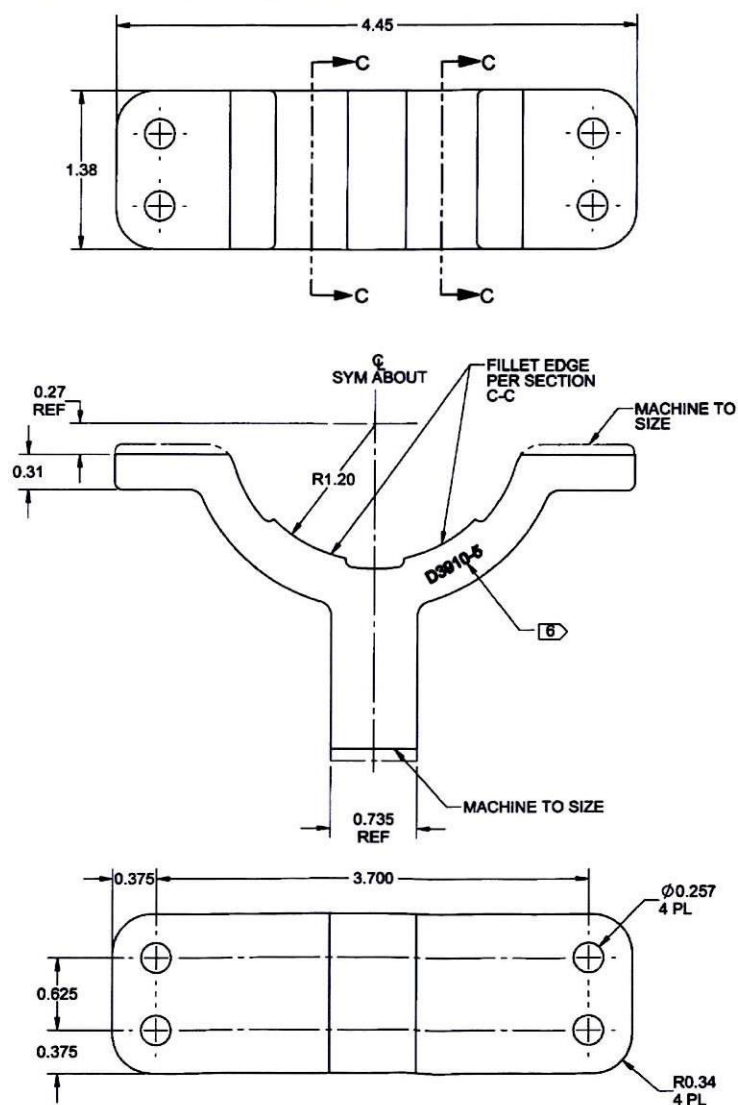
**RELEASED**

2014 JUN 05 47

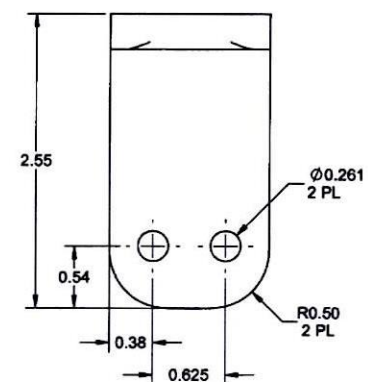
|            |                    |                                                                                                                                                                                                                                                                                |        |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| DESIGN     | AJS                | <b>DART AEROSPACE LTD</b>                                                                                                                                                                                                                                                      |        |
| DRAWN      | AJS                | HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                                    |        |
| CHECKED    | <i>[Signature]</i> | DRAWING NO. <b>D3910</b>                                                                                                                                                                                                                                                       | REV. E |
| MFG. APPR. | <i>[Signature]</i> | SHEET 3 OF 5                                                                                                                                                                                                                                                                   |        |
| APPROVED   | <i>[Signature]</i> | TITLE                                                                                                                                                                                                                                                                          | SCALE  |
| DE APPR.   | <i>[Signature]</i> | <b>X-TUBE LUG (350)</b>                                                                                                                                                                                                                                                        | NTS    |
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**SECTION C-C**

ROUND EDGE  
R0.06 MIN - 0.10 MAX  
2 PL



**D3910-5 X-TUBE LUG**



**RELEASED**

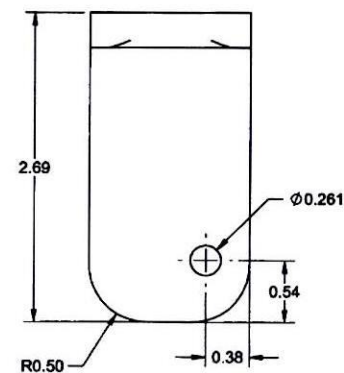
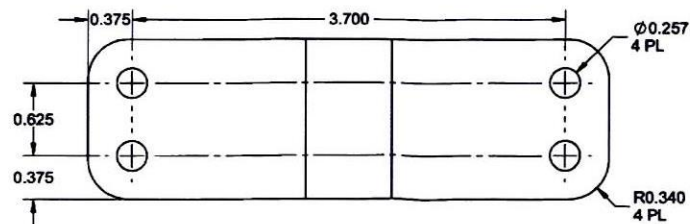
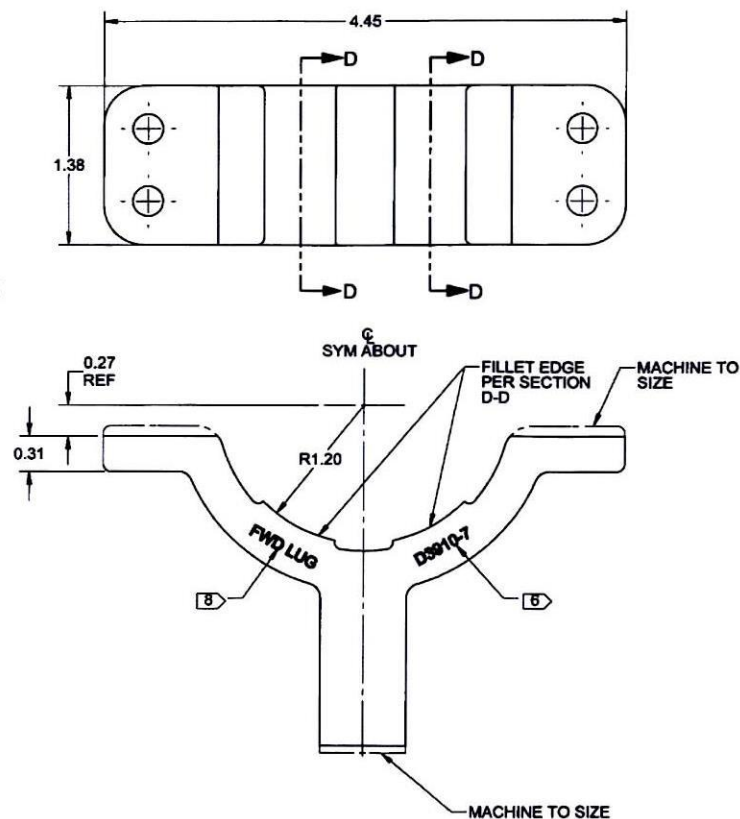
2014 JUN 05

|            |                    |                                                                                                                                                                                                                                                                   |              |
|------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | AJS                | <b>DART AEROSPACE LTD</b>                                                                                                                                                                                                                                         |              |
| DRAWN      | AJS                | HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                       |              |
| CHECKED    |                    | DRAWING NO.                                                                                                                                                                                                                                                       | REV. E       |
| MFG. APPR. | <i>[Signature]</i> | D3910                                                                                                                                                                                                                                                             | SHEET 4 OF 5 |
| APPROVED   | <i>[Signature]</i> | TITLE                                                                                                                                                                                                                                                             | SCALE        |
| DE APPR.   |                    | X-TUBE LUG (350)                                                                                                                                                                                                                                                  | NTS          |
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**SECTION D-D**



ROUND EDGE  
R0.06 MIN - 0.10 MAX  
2 PL



**RELEASED**

2014 JUN 05

|                                                                                                                                                                                                                       |                    |                                        |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------|--------------|
| DESIGN                                                                                                                                                                                                                | AJS                | <b>DART AEROSPACE LTD</b>              |              |
| DRAWN                                                                                                                                                                                                                 | AJS                | HAWKESBURY, ONTARIO, CANADA            |              |
| CHECKED                                                                                                                                                                                                               |                    | DRAWING NO.                            | REV. E       |
| MFG. APPR.                                                                                                                                                                                                            | <i>[Signature]</i> | D3910                                  | SHEET 5 OF 5 |
| APPROVED                                                                                                                                                                                                              |                    | TITLE                                  | SCALE        |
| DE APPR.                                                                                                                                                                                                              | <i>[Signature]</i> | X-TUBE LUG (350)                       | NTS          |
| DATE                                                                                                                                                                                                                  | 14.05.16           | COPYRIGHT © 2010 BY DART AEROSPACE LTD |              |
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Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER

## PO039194

**Supplier:** MEM001-VC  
Metec Metal Technology Inc.  
20 Terry Fox Drive PO Box 781  
Vankleek Hill  
ON  
K0B 1R0 Canada  
Phone: 613 678 3957  
Fax: 613 678 3956

**PO No:** PO039194

**PO Date:** 3/5/18

**Due Date:** 3/22/18

**Purchase Order  
Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**E-MAILED**  
MAR 05 2018

**Attention:** Walz, Shigi

**Via:** Ground

**Pynt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

### Items

| Line Item                      | Part     | Supplier Part No | Item No | Description                                                                         | Status | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (CAD) | Extended Price |
|--------------------------------|----------|------------------|---------|-------------------------------------------------------------------------------------|--------|----------|----------------|-------------------|---------|------------------|----------------|
| 1                              | D3910-3P |                  |         | Crosstube Lug<br>As Per Dwg D3910<br>Rev. E<br>Alodine and Paint as<br>Per QSI 005  | Firmed | 3/22/18  | 30 pcs         | 0 pcs             | 30 pcs  | \$16.10/pcs      | \$483.00       |
| Line Item Note: W/O NO. 173552 |          |                  |         |                                                                                     |        |          |                |                   |         |                  |                |
| 2                              | D3910-5P |                  |         | Crosstube Lug<br>As Per Dwg. D3910<br>Rev. E<br>Alodine and Paint as<br>Per QSI 005 | Firmed | 3/22/18  | 30 pcs         | 0 pcs             | 30 pcs  | \$16.10/pcs      | \$483.00       |
| Line Item Note: W/O NO. 173553 |          |                  |         |                                                                                     |        |          |                |                   |         |                  |                |
| 3                              | D3910-7P |                  |         | Crosstube Lug<br>As Per Dwg. D3910<br>Rev. E<br>Alodine and Paint as<br>Per QSI 005 | Firmed | 3/22/18  | 30 pcs         | 0 pcs             | 30 pcs  | \$16.10/pcs      | \$483.00       |
| Line Item Note: W/O NO. 173554 |          |                  |         |                                                                                     |        |          |                |                   |         |                  |                |

**Grand Total: \$1,449.00**

### Order Notes

CL



20 Terry Fox Drive, Vankleek Hill, Ontario K0B 1R0

Tel. (613) 678-3957 & (613) 678-2782 Fax (613) 678-3956 [metec@metec.ca](mailto:metec@metec.ca)

## CERTIFICATE OF CONFORMITY

SOLD TO:

Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, Ont.  
K6A 1K7

SHIPPED TO:

same

| <u>QUANTITY</u> | <u>PART NUMBER</u> | <u>PART NAME</u>                              | <u>P.O. NUMBER</u> |
|-----------------|--------------------|-----------------------------------------------|--------------------|
| 30              | D3910-3            | Crosstube Lug                                 | 39194              |
|                 |                    | Paint Batch # 21854 / Material Batch # 160522 |                    |
| 30              | D3910-5            | Crosstube Lug                                 | 39194              |
|                 |                    | Paint Batch # 21854 / Material Batch # 160522 |                    |

MATERIAL: supplied by DART

We hereby certify that the above parts were made in conformance with applicable drawings.

*METEC Metal Technology Inc.*

Heather Nixon

Vankleek Hill, March 28, 2018